GREAT BRITAIN
Ministry of Health
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FIRST REPORT

OF THE

BOARD OF HEALTH.

30th April 1805.

AN OUTLINE of a PLAN to prevent the Spreading of the Plague, or other contagious Diſeaſes, preſented by the Board of Health, agreeably to the Inſtructions of His Majeſty's moſt Honourable Privy Council.

Preliminary Conſiderations.

IN obedience to the Commands of His Majesty's most Honourable Privy Council, we proceed to the Conſideration of the Third Head of their Lordships Inſtructions, and to the Detail of the Measures which it would be proper to adopt, in case the Plague, or other infectious Disease, attended with great Mortality, should pass the Barrier of the Quarantine, and actually appear amongst us.

Diſtreſs occaſioned by the the Plague.

It is so long since the Plague has visited this Country, that it is in some degree necessary to recal the Mind to

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the Miseries inflicted upon a Nation by that greatest of all Calamities to which the Human Race is subject; in order that we may hold ourselves the more ready to comply with the Regulations and orders which the exigencies of such a time would call for. Unquestionably the Misery produced by a wide-spreading Pestilence far exceeds all others, and considering the size of our Towns, and the Population of them, particularly of the Metropolis, there is hardly any Nation would have so much to dread from that Calamity as this Kingdom. The destruction of Thousands of Individuals, the Interruption of Trade, the Check to Manufactures and Commerce, and the consequent diminution of the Public Revenue, are some of the certain Evils attendant upon Pestilence: the Regulations therefore, and Orders, necessary to check its progress, or to extinguish it at its first appearance, however strict they may be, cannot be deemed harsh or severe, when the Magnitude of the Object for which they are framed is considered. Nor indeed is there any reason to fear that the good sense of the Nation would not readily acquiesce in Measures, the utility and advantages, as well as the necessity of which, would be obvious.

Regulations drawn from the Plague.

It should be observed, that the following Regulations are founded chiefly on experience in what has been called the Plague, by way of pre-eminence, or the Plague of the Levant. But as no Disease can be said to equal, still less to exceed this, in its infectious and fatal nature, it is not unreasonable to presume, that the Precautions which have been found sufficient to guard against that, would likewise be effectual against the Sickness which lately prevailed at Gibraltar, or any other contagious and mortal Distemper.

Of Separation.

The experience of many Centuries has shewn, that the Plague is spread by near approach to, or actual contact with the Person of the Sick, and by Cloaths and Apparel, which, having imbibed the Poison, are capable of retaining it. Hence it is only necessary to keep at a certain distance from those ill of the Disease, and from such Things as have been exposed to it, in order to avoid the Contagion. This is the great Principle we are all along

to

to keep in view. All the Regulations of Quarantine rest upon this Foundation. The Separation of the Sick from those that are well, furnishes the only means which promise any reasonable security against the spreading of such Calamities.

Of the success of these precautions, we have many signal Instances. Since the fatal year of 1720 at Marseilles, several Persons, at different Periods, have been afflicted with the Plague in the Lazaretto of that Port; yet by a careful Prevention of Intercourse it has not spread. Also Persons under the same Roof, in different Apartments, when all communication has been cut off, have not suffered. The Practice in the Factories at Aleppo, and elsewhere, of "shutting up," as it is termed, affords a well known Example of the same kind, where the Merchant continues in perfect Security in the Midst of a surrounding Pestilence, whilst the Inhabitants of contiguous Houses, not cut off from Intercourse with the common People, become Victims of the Disease. In the Year 1771, the Plague raged at Moscow, and in the Month of September destroyed in that City 27,000 Persons, while the Nobility and opulent Gentry, who confined themselves to their Palaces or Houses, suffered very little. And Mertens, who was a Physician on the Spot, informs us, that it broke out Seven different Times in the Orphan Charity there, containing 1400 Persons, and was as often suppressed by means of a careful Separation. Likewise of the pestilential Disorder, lately so fatal at Malaga, we are informed, that the Inhabitants of Medina-Sidonia remained uninfected so long as the Governor kept the Gates shut; but upon Intercourse being permitted, the Disease presently attacked them; yet then, by a vigilant and judicious Police, it was confined to one Quarter of the Town, and did not extend its ravages further. The Plague appeared in our Army during the late glorious Campaign in Egypt several Times; but from the good Care that was immediately taken to separate the Sick from the Sound, and to prevent such intercourse as is allowed by the Turks, the Mischief it occasioned was comparatively

Instances.

Mertens, part 2. chap. 4. p. 193.

comparatively small, and the Disorder was soon suppressed.

These, and other similar facts, point out, in a very convincing manner, the advantage to be derived from careful separation, and the necessity of a strict observance of the Regulations to be laid down for this purpose.

Practice of former Times.

In consulting the experience of former Times, we have found with pleasure, that the practice of our Ancestors, as far back as the Time of Queen Elizabeth, furnishes many wholesome Regulations, which might easily be adapted to the present Times. These we have thought the more deserving of attention, not only because they bear the Stamp and Seal of Experience, but because their Execution does not appear to have any thing in it inconsistent with the Laws and Constitution of the Kingdom, as the legal authority of the Magistrate is the only power resorted to. But though we commend the spirit in which the Regulations were executed, some of the Regulations themselves seem highly injudicious, as particularly where they direct the Sick and the Well to be shut up together in the infected Houses. This proceeding was in its consequences no less injurious to the Public than cruel to individuals; for the dread of being shut up made every one about the Sick conceal the Disease as long as possible; and when that could no longer be done, and the Magistrate had set his Mark upon the House, the horror of their situation drove them to despair, and made them clandestinely, or even by Force, break through their Confinement, and spread wide the Infection.

Regulations propoſed.

In the following Regulations, we have had respect to the Practice both of our own Country and of Foreign Countries in Times of Sickness, and have endeavoured, as far as the Nature of the Subject would admit, to consult the security of the Public, and the Comfort of Individuals. But the Principle of Separation being acknowledged, the Mode to be adopted may admit of considerable Variation from many local circumstances.

Some

Some Variation of Practice will likewise be necessary in different Degrees of the Calamity; for such Measures as seem best calculated to extinguish it in its Beginning would become impracticable, when the Mischief had spread over a larger District; let us therefore early exert ourselves with Promptitude and Vigour before it has acquired Strength with its Growth, and become too powerful to be resisted. Different Degrees of Pestilence.

As soon as any one is reported to be infected, Notice must immediately be given to the Magistrate, who shall employ some Physician to examine into the Fact; and upon receiving the Confirmation of his Report, the Magistrate shall, without Delay, remove the rest of the Inhabitants from the Sick House to some Place of Observation. It may be left to the option of the Parties, either to provide for themselves, at their own Expence, a House for this Purpose, such as the Magistrate shall approve of, or go to one procured by the Magistrates at the Public Charge. They shall be considered as suspected, and shall be examined twice every Day by some Physician, in order that any one of them who sickens may immediately be removed; the others shall be prohibited from all Intercourse for the Space of Twenty Days. A Physician ought to be sent immediately by the Lords of His Majesty's most Honourable Privy Council, or by the Board of Health under their Direction, for the exclusive purpose of attending the Sick, and also for examining the Suspected. The first Steps to be taken. Removal of those not infected. Physician.

The Suspected being removed, the sick Person shall continue to reside in the House where he was taken ill, and shall not be permitted to quit it till Twenty Days from the Date of his perfect Recovery, or longer, in case any open Sore, or other Circumstance, render the Security doubtful. He must then be required to go two several Times into a warm Bath, or to have his Body as often thoroughly washed all over with warm Water; he must afterwards put on Cloaths which are either new, or have been effectually purified, according to such Process as shall hereafter be directed. The Sick to be confined.

Of the Nurſe.

The ſick Perſon ſhall be allowed to have any one of his Friends or Family he chuſes, and who may be willing to attend him, as his Nurſe. If there is nobody, he or his Friends appoint for this Purpoſe, the Magiſtrate ſhall provide one. In any Caſe the Attendant muſt upon no Account leave the Houſe till the Sick be either recovered or dead, and ſhall then perform a Quarantine of Twenty Days, and ſubmit to the Regulations prescribed for the Purpoſe of Purification.

Of removing the Cloaths of the ſuſpected.

Thoſe who are removed from the Sick Houſe ſhall give to the Magiſtrate a correct Liſt of all the Articles they take with them, which ſhall be ſubjected to the ſame Proceſs as is uſed at the Lazarettos in regard to ſimilar Articles received from ſuſpected Ships. No Articles ſhould be removed without an expreſs Licence from the Magiſtrate. It might be adviſeable to provide cheap Cloathing, at the public Expence, for the uſe of ſuch Poor Perſons as have not a ſufficient Change of the common Articles of Dreſs.

Of Watchmen.

It will be neceſſary that One or more Watchmen or Guards be placed conſtantly at the Door of the infected Houſe; and alſo at the Houſe of Obſervation, to prevent all Ingreſs or Egreſs, either caſual or deſigned.

Meſſengers.

Meſſengers ſhould alſo be provided, whoſe Buſineſs it ſhall be to procure ſuch things as are wanted in the Sick Houſe or Houſe of Obſervation. Theſe Things ſhall be conveyed through a Window by a Plank or a Baſket. In the Caſe of poor People, all Neceſſaries muſt be furniſhed by the Magiſtrates at the Expence of the County, or neighbouring Counties, which, from their Proximity, become more immediately intereſted in checking and extinguiſhing the Diſeaſe.

County Rates.

Separation of the Gentry.

If the infected Perſon be in a Situation to admit of inſulating the Part of the Houſe in which he reſides, it may not be neceſſary to remove the other Parts of the Family, provided they will ſubmit to be ſhut up in the

same

same House, entirely separated from the Sick, and cut off from all Communication with the rest of the Town, to the Satisfaction of the Magistrates. In this, as in the former Case, every Individual of the Family must perform a Quarantine of Twenty Days from the Time of the Cessation of the Disorder.

Management of the Sick House.

The Economy and Management of the Sick House should be as follows: The Person ill of the Plague, or other contagious Fever, should be laid in a Bed without Curtains, in the largest and most airy Apartment, and the Bed should be placed in the middle of the Room; a Part of the Window and Door should be constantly kept open, to promote a current of Air in the Room, taking care, however, that it do not annoy the Sick. If it be cold there should be a Fire in the Room, which would promote the Circulation of Air in the Apartment. The utmost attention should be paid to Cleanliness, both in the Persons of the Sick, and in the Cloaths that are about them, which ought to be frequently changed. By these Means the Accumulation of the Poison will be prevented in such Things as are about the Sick; and, by means of Ventilation, the Concentration of the Poison will be guarded against in the Air of the Apartment; both which Circumstances will materially contribute to the Safety of the Nurse and all others about the Sick.

Importance of the above Precautions.

The Importance of these Precautions will appear, if we keep in Mind the well-established Fact, that the Poison, by being diffused in the Air, soon becomes innocent; and that at a very small distance from the Persons of the Sick, it ceases to do mischief. It can scarcely, therefore, be doubted, that the less it is allowed to concentrate in the Air of the Apartment, or to collect in the Apparel or Bed Cloaths, the less Danger will there be of the spreading of the Disease, and the greater Chance of its speedy Extinction.

Of the Physician, Surgeon, Apothecary, and Nurse.

The Physician, Surgeon, Apothecary, or Nurse, who attends any Person ill of the Disease, should be enjoined to remain about the Sick as short a Time as is consistent with

with their Duty; and to avoid as much as possible all Contact with his Person, or with his Bedding, Cloaths, &c. Gloves of oiled Silk, an oiled Silk Dress, and other similar Precautions, may be useful with this View. These might easily be washed or wiped with a wet Sponge, which should be allowed to remain in Water. The Glass or Cup, out of which the Sick have taken any Thing, should be immediately put in cold Water. Any Fragments of bread or other Food they may have handled should be treated in the same Manner. Their excrementitious Discharges should also all be received in cold Water, and quickly moved out of the Sick Apartment.

Of the Linen of the Sick.

The Linen about the Persons or Beds of the Sick, when changed, should be put in cold Water, in which they should lie till it can be put on the Fire and boiled; and every other part of Cloathing of a suspicious Nature might be treated in the same Manner. The washing of such Things should be all performed by washing Machines.

The immediate Source of Infection uncertain.

These Precautions may appear minute, but we beg it may be recollected, that though we know most certainly that the Poison proceeds from the Person of the Sick, yet we do not know that it is confined to any one discharge more than another, and therefore must guard as much as possible against them all. The Perspiration, both sensible and insensible, the Breath, the Vapour hanging about the Bed Cloaths, the excrementitious matter discharged from the Mouth, the Nose, the Bowels, and the Bladder, also the Matter from the Sores, are all probably capable of conveying the Poison, and ought therefore all to be carefully avoided.

Of the Dead Body.

If the Sick die, the Body should be wrapped in oiled Cloth, or tarred Cloth, and soon buried.

It must be remembered, that every thing that tends to secure those about the Sick from Infection, is of the greatest Importance, both by checking the Progress of the

the Disease, and by giving Confidence to those whose Busines it is to help and assist the Afflicted: for by these Means many of the Miseries which accompany Pestilence, would be alleviated. Nor are such Precautions to be thought unavailing, when it is considered how many of the medical Attendants in different Plagues have escaped; which can only be imputed to their using similar Precautions with those we have now stated; very few of the Physicians or other medical Attendants who took care of the Soldiers infected with the Plague in the Army of Egypt died. And of Thirteen Physicians at Moscow, who formed a Committee by order of the late Empress of Russia to attend those ill of the Plague, one of the most respectable (Mertens) states, that they used no other Precautions than avoiding to touch the Persons or the Cloaths of their Patients, and that he himself and all his Brethren escaped the Disorder.

Confidence necessary for the Attendants.

Physicians often escape.

The Efforts to be made to extinguish the Disease can be all much more completely carried into Effect in the beginning, while there are but few ill, than after the Contagion has extended to a greater Number; therefore, every Thing that Diligence and Zeal can dictate must be done in the first Instance. On the melancholy Supposition that it spreads widely, new Measures would become necessary.

Advantage of early Measures.

As soon as any Town is declared to be infected, it ought to be divided into Districts. Those inhabiting the sound Districts should be at liberty to depart; but from the tainted Districts, none should be permitted to remove without a Certificate of Health signed by the Justices belonging to that District.

What is to be done when the Disease is spread.

Three Justices at least in each District should meet daily for the Purpose of receiving Applications for Relief, of granting Certificates of Health, of providing for the Burial of the Dead, of conveying the Sick to the Hospitals, of regulating the Supply of Provisions, of appointing different Officers and Attendants, &c. &c.

Of Justices, and their Duty.

Council of Juſtices. A Council of Juſtices ſhould meet once in the Week or oftener, to conſider of the beſt Manner in which their Reſolutions can be carried into effect. They ſhould alſo report to the Privy Council or to the Board of Health.

Examiners. It will be the buſineſs of the Juſtices to appoint Examiners who may diligently enquire into the State of Health in each Diſtrict. Theſe Examiners ought to be Perſons acquainted with Diſeaſes, as Surgeons or Apothecaries.

Beſides Examiners, it will be neceſſary to provide,

Watchmen. 1ſt, Watchmen or Guards, to be ſtationed at the Doors of infected Houſes;

Meſſengers. 2d, Meſſengers, who ſhall procure every thing that is wanted;

Carters. 3d, Carters and Carriages, to convey the Sick to the Hoſpitals, and others to carry the Dead to the places appointed for their burial;

Conſtables. 4th, Conſtables or Overſeers, who ſhall ſee that the above mentioned Officers perform their Duty.

Early Notice. Phyſicians, Surgeons, and Apothecaries, and alſo all other Perſons ſhould be enjoined to give immediate Notice to the Magiſtrates of every Caſe of Infection.

Of Removal of Hoſpitals. After the Diſeaſe has ſpread, the number of Sick rendering it impracticable to provide adequately for them while they are diſperſed in different Parts, or to remove all the other Inhabitants from every infected Houſe, it becomes expedient to carry the Sick, as early as poſſible, to ſome temporary Hoſpital, unleſs their ſituation in life enable them to provide for themſelves, without Riſk to the Public, in a manner that ſhall be ſatisfactory to the Magiſtrates.

Of the Conduct of Hoſpitals. Every Attention will be neceſſary to render the Hoſpitals as clean and comfortable as poſſible, that the Sick may not conſider is as a Hardſhip they will endeavour to avoid, but as a Benefit they will be glad to embrace.

It will be necessary beforehand to provide Servants for the Hospital, and also a Superintendant, upon whom much will depend. There must likewise be Carts for the exclusive purpose of removing Persons to the Hospital. For Hospitals may be used Houses, Barns, Sheds, Tents, or any other Buildings the Magistrates can appropriate to this Use.

Sick, Suspected, and Convalescent.

The unsound Part of the Community should be divided into Sick, Suspected, and Convalescent; aud they must be kept separate; Of the suspected the Individuals ought as much as possible to be kept distinct from each other.

Of the Suspected.

The uninfected Persons who have been living in the same House with the Sick ought to be considered as very much suspected; they should be confined either in that House, or in some Place of Observation, for the Space of Twenty Days before they are declared to be sound. During this Time they should be examined Night and Morning by some Physician, Surgeon, or Apothecary; and on the first appearance of Disease, that Person should be taken to the Hospital; and the others who have had communication with him, should be obliged to begin their Quarantine anew.

Public Assemblies prohibited.

In order the more effectually to prevent the Contagion from spreading among the people, all Meetings or Assemblies of every kind should be discontinued; all Places of public Amusement should be shut up, as Play Houses, &c. and even the Schools and Churches should not be opened; and the Places appointed for Markets should be removed without the Town.

Of Markets.

Of Burials.

It becomes a Duty of the Magistrates likewise to appoint Burial Grounds. The Burials should be conducted privately, and in the Night Time, without tolling a Bell. And the Bodies ought to be deposited at a Depth of not less than Six Feet below the Surface.

Orphans and helpless Poor.

Moreover, some provision will be necessary for Orphans and helpless Children; and likewise for those poor

People

People who are distressed by the interruption of their usual Business. But these must only be relieved when their Situation is properly attested.

Goods to be secured.

For securing the Goods of those who are moved from their own Houses to the House of Observation, the Magistrates should direct such Measures to be taken as to them may seem most expedient. The apartments not used might be sealed up; the goods and furniture might be shut up in one or more Rooms, also to be sealed. What remained in use for the Sick, if an hired Nurse were employed, should be taken account of, and the Inventory entered in a Book to be kept by the Magistrate.

Voluntary secluſion.

The intercourse with Neighbours should be as little as possible; and any Person finding any Symptoms of Disease upon him, should separate himself from others; and the moment the Complaint is found to be the Plague, or Pestilential Disease, he should give that Notice to others which he would think but fair should be given to him by another in his Situation. This cutting off of Intercourse has been proposed to go the length of putting every one into Quarantine; but there are many difficulties in doing this; and we hope the Disease might be cut short before such a Measure becomes necessary. Yet it will deserve the Attention of the Magistrates to promote the wishes of Individuals, who, from a Desire to cut off Intercourse, may propose to confine themselves to their own Houses. This may be done by appointing proper Persons to go to Market for them, and furnish all such Families with Necessaries. Supposing the Disease not to have been cut short in the Beginning, but to continue to spread, great Advantages would result to the Public from this measure.

Phyſician, Surgeon, or Apothecary, to relinquiſh other buſineſs.

Any Physician, Surgeon, or Apothecary, who attends the Sick of the Plague, or other like Disease, should be obliged to confine his Practice entirely to that Department. He should be required to carry a Wand, or other mark of Distinction, and to avoid, as much as possible, all

all Communication with other People. He should keep one Coat for the Special Purpose of visiting the infected; and immediately upon his return Home each Day, should put it off to be properly fumigated. The Family residing in the House with him should all be considered as suspected. And lastly, both he and they should perform a Quarantine of Twenty Days subsequent to his latest exposure to Infection.

Of Remedies.

We think it right to state, that there is no known Antidote against the Contagion of the Plague, or other diseases of a similar kind; for it is necessary that People should not expose themselves to danger from a Reliance on the Virtues of any vain Remedies which may be recommended with that Confidence which generally attends Ignorance, and which is often sufficient to impose upon the unwary. At the same Time, we are very far from depreciating the importance of Medicine at such a Time. For, though indeed it furnish us with no Specific to strike at once at the root of the disease, yet does it suggest various Means of relieving the most distressing circumstances which attend it, and of assisting the natural powers of the Constitution to withstand the baneful effects of its Poison.

Of Fumigations.

It may be proper to take Notice in this Place of the employment of Fumigations. Those prepared from the Mineral Acids in the manner hereafter to be described, may at any Time be employed in the Sick Chambers; but we feel it our duty to discountenance such a Reliance on their Efficacy as would prevent an Attention to the more important Object of Ventilation.

Reasonableness of these Regulations.

The above Precautions will, in our Opinion, afford the greatest possible Security to the Public, at the same Time that due Provision is made for the Care of the Sick. Nor can they give rise to Concealment, through Fear and Apprehension, in any Rank of Life. To the Poor Man, what can be more desirable than to know that he will not be abandoned in the most cruel of all Diseases? Even in the separation of the sick from those that are well, there

is nothing that should create Alarm. For the poorest, seeing the Reason for which it is done, should rejoice in the Prospect it holds out, of saving perhaps his Wife, his Children, or other near Relations, from the most imminent Danger of Destruction; and we do not think it too much to expect, from the Information and Sense of Justice that pervades all Ranks, even the Poorest in this Country, that they should lend their helping Hand with the same Zeal they would do in the Case of Fire, or other impending Misfortune. Even the Sick would find their Advantage in giving the earliest Notice of their Disease. For what could any one, ill of such a Malady, desire more, than that he should have proper assistance himself, and that those most dear to him, should be saved from the Danger of perishing by Contagion derived from him? We beg Leave to repeat again, that we do not think we presume too much on the good Sense of the Country, to suppose that the Poor will see the Reason and Justice of the measures to be taken; and that those in better Circumstances will not only readily acquiesce in them, but give their best Aid to render them efficacious. By doing which, in every Rank of Life, while we are discharging a sacred and important Duty to our Fellow Creatures, we shall all likewise best consult our own safety.

It will be highly important that the Nature of any pestilential Disorder which may unhappily be introduced, should be discerned at an early Period. It may, therefore, be useful to give a short Account of the distinctive Symptoms by which the Plague and the Pestilential Distemper at Gibraltar are principally characterized.

Signs of the Plague.

Persons ill of the Plague are attacked with the following Symptoms: With Cold and Shivering; with a Lassitude and Pain in the Limbs; with a Loss of Appetite, Sickness, and sometimes Vomiting; also with a Pain in Head. These affections are the Companions of most Fevers at the Beginning: But in the Plague the Headach is particularly severe, and there is a Confusion and Weight in it, and a Giddiness which comes and goes.

There

There is an uncommon Prostration of Strength, and a great Oppression about the Præcordia, accompanied with an unusual Dejection of Spirits. The Sick are inclined to be silent; and though Anxiety is strongly marked in the Countenance, they make but few Complaints. If these Symptoms do not put an end to life in Twenty-four Hours, they increase in Violence through the Second or Third Day, and the Progress of the Disorder then shews itself in Tumours of the Lymphatic Glands, in the Armpits, Groins, or Neck, or by Carbuncles which appear in many Parts of the Body. And these Eruptions are such specific Marks of the Plague, that one or other of them is almost always present, unless through the extreme Malignity of the Disease, or the Weakness induced, the Patient sinks before they have time to appear. These general Notices we conceive to be sufficient to make the attending Physician or others aware of what they are to apprehend, and to decide him in taking the necessary Measures of Precaution which the Circumstances may require.

Though the History of the pestilential Fever which has prevailed at Gibraltar, and on the Coasts of the Mediterranean, be not perfect, yet we think it our Duty to lay before your Lordships some Account of it, according to the best Information that has been received of its Nature and Character.

Signs of the Gibraltar Fever.

It begins with cold Shivering, Pain in the Limbs, frequently, but not always, accompanied with Sickness, and a Disposition to vomit. There is a Pain in the Head, more or less violent, attended with a Suffusion and Redness of the Eyes. In many, the Pain of the Head is very distressing, and in some Cases confined to the Forehead, whilst in others it extended very low down between the Eyes and Cavities of the Nose; sometimes the Cheeks and the whole Countenance was swollen, with a glossy appearance. The Pulse in this Disorder is full and quick, soon after the accession of the Fever, but without any Difficulty of Respiration. The Heat of the Skin, as soon as the Cold went off, became always very great; and this

this Heat, with a full quick Pulse and Pain in the Head, generally continued to increase during the first Thirty-six Hours, and then to decrease gradually for the same length of time; so that at the End of Seventy-two Hours all febrile Heat and Fulness of the Pulse, as well as the Pain of the Head and Limbs, seemed to have left the Patient. In this Progress of the Disease, a bleeding from the Nose often happened, and a Yellowness of the Skin came on, espacially if the Distress about the Stomach had been great, and the Effect of Vomiting violent. A slight delirium sometimes comes on; but, like the Yellowness of the Skin, it is by no means constant. On the Third Day of the Attack, it frequently happens that the Irritability of the Stomach is greatly increased; and in some cases, nothing can afterwards be retained on the Stomach. The Evacuations from the Bowels now likewise become too frequent, attended, especially if active Purgatives had been given, with a total Suspension of the Office of Kidneys. No Urine seems to be secreted; for there is no inclination to make Water, nor any Sense of Fulness in the Region of the Bladder, nor any Urine to be drawn off by the Catheter. These Symptoms, viz. an increased Irritability of the Stomach, the adventitious Diarrhœa, and the Deficiency of Urine, accompanied with Hiccough, are considered as extremely unfavourable Symptoms, and very few persons recover after their Appearance, especially if there be in the Ejections from the Stomach light ragged Filaments of a brownish Colour, resembling the Washing of the Mouth when Port Wine or any Red Wine has been used for that Purpose. The great Debility of the Pulse, with the excessive Prostration of Strength which now takes place, are Symptoms which forebode a fatal Termination of the Disorder.

The foregoing Regulations, though far from being complete, have been drawn up with Care and considerable Labour, from a great Variety of Inquiries which they involved; and we have thought it right to lay them, in their present State, before the Lords of His Majesty's most Honourable Privy Council, in order that it may be seen we have not neglectful of their Lordships Commands

mands in entering upon the Business they had proposed to us. We beg leave to state that we continue to employ ourselves in the further Execution of this Part of our Duty, and that we are at present engaged in considering the best Means of purifying Goods or Houses which may have been exposed to Infection. On this Point we hope soon to present to His Majesty's Privy Council such Observations as appear to us most worthy of Attention.

A. S. Hamond.	J. Hunter.
F. Milman.	H. R. Reynolds.
A. Munro.	W. Hederden.
Lucas Pepys.	J. N. Harness.

Board of Health,
April 30th 1805.

Ja. Hervey Secretary.

SECOND REPORT

OF THE

BOARD OF HEALTH.

15th May 1805.

On Fumigation, &c.

THE Uncertainty in which we remain respecting the poisonous Matter which excites the Plague, or other similar Diseases, necessarily throws a Degree of Obscurity over any Measures that may be adopted for its Destruction. Some have relied upon Ventilation, some upon Fumigation, as the only Remedy or Security; some again have rejected both; some have advised that the Houses and Furniture of a whole City should be subjected to Quarantine, while others, observing how entirely the Disease has in certain Instances ceased, although no Means had been employed for its Extirpation, have hastily concluded that all Measures of this kind were nugatory and troublesome, and ought to be laid aside.

In considering a Subject of this Kind, it is obvious, that we must not risk the Lives of our Fellow Creatures, through a confidence in any speculative opinions which want the Sanction of Experience. But even Experience itself, which should be our surest Guide, has been appealed to in support of Doctrines totally opposite to each other. Fully impressed with a sense of these Difficulties, we have endeavoured in the following Observations to

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select from the Practice of infected Places, what has been employed with the greatest Appearance of Success; and to correct the inartificial, or sometimes prejudicial Directions of Antiquity, by the Discoveries and Improvements of later Times.

In the Zeal of Individuals, and sometimes of the Magistrate, to destroy more compleatly all Sources of Infection, it has been proposed to burn Cloaths, Furniture, and even Houses in which the Plague has been; but whenever this measure has been attempted to be carried into effect, it has been defeated by its own Severity. For, by giving Occasion to Concealment, or to the secret Removal of such Articles, there is reason to think more Harm has been produced, than if no Precaution whatever had been taken. On this Subject, therefore, as well as in the Separation of the Sick, moderate measures are not only more easy to be executed, but afford, in Fact, a greater Security to the Public.

Exposure to free Ventilation in the open Air, certainly dissipates and renders inert the Poison of the Plague, but the Length of Time required is considerable, even on the Supposition that Forty Days were always sufficient for that Purpose. Muratori indeed says that he, with other respectable Authorities, thinks Twenty Days may be long enough. Lib. 1st. Chap. 9. Pa. 71.

The Purification of Goods in Lazarettos has been almost entirely trusted to Ventilation. Most of the Articles of Merchandize do not admit of washing; and nothing satisfactory, in the Way of Fumigation, has been introduced into Practice.

But where other Modes of Purification are admissible, not only the Time necessary for destroying Infection may be much shortened, but the Security thus obtained may, in many Instances, be rendered much more perfect than could be done by the most protracted Exposure to the open Air.

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We therefore advise, that every Article of Apparel, Bed Cloaths, or Household Furniture, that has been exposed to Infection, and that will bear washing or scouring, should be immersed in Water previous to its Removal from the infected Chamber; and it should be suffered to lie in the Water till it can be boiled, and washed or scoured, which ought to be with as little delay as possible. All Suspicion of Infection would thus be destroyed in a very short Time.

From on board Ships, these Things may be attached by a Line, and thrown over into the Water, where they should remain an Hour, or longer, before they are boiled and washed.

Some things, which perhaps would not bear boiling, might be fulled.

Washing Machines, and Fulling Mills, are recommended, as particularly proper for the Purpose of cleansing infected Goods, without Risk to the Persons employed.

Such Things as have been very near the Person of the Sick, as Linen, Bed Gowns, Bed Cloaths, &c. and indeed every suspicious Article, ought to be removed only with a Pair of Tongs, or Forceps, without handling.

Wherever the above Directions can be put in Practice, we recommend them in preference to all other Modes of Purification. But there are some Articles, viz. Mattrasses, Feather Beds, Bolsters, and Pillows, which either could not be put into Water, or not without great Inconvenience, or not without much previous handling, by which a great Risk of Infection would be incurred. For such, therefore, some other means of Purification should be used, or at least in the First Instance. With this view, recourse has been had to Fumigations.

In looking into the general Practice on this Subject, if implicit Faith were to be given to all that is stated, it would

would seem as if Fumigations, of almost any Kind, would destroy the Poison of the Plague. Odoriferous Woods and Gums, Sweet Herbs and Flowers, Aromatics, Sulphur, Pitch, Amber, Asafoetida, Arsenic, Antimony, Orpiment, and numerous other Substances, have been recommended. The Speculative Grounds upon which they have been employed may easily be guessed, but there are no satisfactory Experiments to ascertain their respective Merits. Sulphur is considered as holding the First Place, and probably with Reason. Sulphur reduced to Powder, and mixed with Saw Dust, or powdered Charcoal, in the Proportion of One Part of Sulphur to Two or Three Parts of Saw Dust, or Charcoal, should be put in small Quantities in Earthen Pots, and these again should be set in Iron Pots, or Braziers, in Number according to the Size of the Apartments; or Sulphur and Nitre, mixed in the Proportion of Seven Parts of the former to one of the latter, make a good Fumigation; the Nitre must be well dried. The Goods to be fumigated ought first to be exposed to a Stream of Air, within the infected Chamber, for Twenty-four Hours, in order to lessen the Risk of the Expurgators, and should then be disposed on Lines, or otherwise, in the manner most favourable for receiving freely on all Sides the elastic Fumes and Vapour. The Windows and other Apertures should then be well secured, and Fire having been set to the fumigating Materials, the Operator must immediately retire, and the Door must be shut. The Room having continued to be closed up for Twenty-four Hours, the Cloaths should then be taken out, and exposed to a free Current of Air for other Twenty-four Hours; at the Expiration of that Time, such things as have been only slightly exposed to Infection, may be considered as purified; the Things under Circumstances of stronger suspicion, instead of being discharged, should again be submitted to a Repetition of the same process, and not considered as purified till the Expiration of Twenty-four Hours from the Time of their Second Fumigation.

The Lines upon which the Cloaths have hung, may for further Security afterwards be burnt.

If possible, the Fumigation should always be performed in the infected House, without which, one of the principal Objects in View would be lost. But if from want of Accommodation in the confined Parts of a Town, or from any other Cause, that cannot be done, it may become expedient to provide a public Place for these purposes. We recommend the following Plan:

That it should consist of,

1st. An Airing and Sorting Room, where the Goods should remain exposed to the air Six Hours, during which Time an Inventory should be taken, and a Duplicate delivered to the Owner.

2d. A fumigating Chamber, with Lines and proper Utensils.

3d. A ventilating House, or Shed, with an addition of Fires placed in different Parts of the Room, in Number and Size proportionate to the said House, furnished likewise with Lines, and admitting a free Current of Air.

The Whole should be inclosed with a Double Fence.

A Superintendant, Clerk, and Servants would be necessary for this Establishment; and they should be prohibited from all Intercourse for Twenty Days, subsequent to their latest Exposure to Infection.

It is a circumstance of no small Importance to determine what should be done with the Bed, or matrass, on which an infected patient has been lying, and which may therefore be supposed in an especial Manner to have become impregnated with whatever it is that constitutes the infectious Matter of the Plague, or other epidemical contagious Disease. After duly considering the Danger to be feared, and the Difficulties to be overcome, we have concluded the best Security would be obtained by first fumigating these Articles in the infected Room, then tying them up, and carrying them in Carts appropriated to the Conveyance of suspected goods to a House of Purification, to be baked in an Oven erected for that Purpose,

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for Twelve Hours; they should afterwards be freely exposed to the Air for Fourteen days.

In Cases of extraordinary Suspicion, or where the things are of little Value, it might be adviseable to destroy them, the Magistrate finding others in their Place.

Wooden Furniture may be first fumigated and afterwards scoured.

Rooms should be fumigated for Twenty-four Hours, then aired for other Twenty-four Hours, and afterwards scoured, and white-washed, or painted, especially the Parts which have been most exposed to Infection.

The Fumigation with Sulphur, as above described, is at once the most efficacious, and the cheapest; we therefore recommend it to be used in Preference to all others. But as the utmost caution is necessary in conducting the sulphuric Fumigation, it is adviseable that such Fumigation should not be attempted but by those who have been previously instructed in the process, and apprised of its Danger; for it does not admit of the Presence of any living Creature, as the Fumes of the Sulphur would instantly prove fatal. Therefore other Fumigations have been used in the Apartments of the Sick. In place of the elaborate Receipts of the older Physicians, modern Chymists have shewn, that although the Vapour of the Vitriolic Acid be inconsistent with Animal Life, yet the Vapour of Nitrous and Marine Acids, may be employed with Safety and without Inconvenience. Dr Carmichael Smyth has directed the Fumes of the Nitrous Acid to be used in the Wards of Hospitals full of Sick; and M. Morveau Guiton has employed the Fumes of the Muriatic Acid in the same way; but it must not be forgotten that even allowing these Acid Vapours to possess all the Virtues attributed to them, in the Diseases against which they have been employed, it would be unphilosophical, and contrary to the Principles of just Reasoning, to infer that they must have the same Virtues in other Diseases. Such is the subtile Nature of all the Poisons generated

nerated in animal Bodies, that we are totally ignorant upon what their Properties and Powers depend, and cannot, upon general Principles, apply to one of those poisons what we have learned of another. We are led to make these observations, because the Language commonly used on this Subject may lead to serious error. Contagion and Infection are Terms, which express the Mode in which the Poisons are supposed to be applied to sound Persons; but by a common Figure in Language, they are often used to express the Poison itself, and such Poisons go by the Name of contagious and infectious, and what destroys Contagion in one Case, it has been inferred would destroy it in another; but there is no foundation for this broad Conclusion. For Example's Sake we will suppose it proved that the Acid of Nitre or of common Salt would destroy the poison of the Jail Fever; we cannot from thence infer that it would destroy that of Measles, Small Pox, or the Plague. Having premised the above Reflections, we have no Hesitation in recommending Trial to be made of the Vapour of the Nitrous or Muriatic Acid in the Apartments of the Sick, provided none of the Precautions respecting Ventilation, Change of Apparel, &c. recommended above, be neglected.

The Nitrous Acid Vapour is disengaged from Nitre by adding to it Vitriolic Acid; and in like Manner the Muriatic Acid Vapour, by adding Vitriolic Acid to Sea Salt.

Nitre reduced to Powder, and Vitriolic Acid in equal Quantities, mixed in small Pots, and dispersed through th Wards of an Hospital, discharge copiously the Fumes of the Nitrous Acid, and the Discharge is more rapid if the Pot be placed in hot Sand.

Sea Salt a little moistened - 15 parts,
Acid of Vitriol (of the specific Gravity of 1,7) - - - 12 parts,

mixed in Pots of a moderate Size, which may be put in a Sand Bath, or not, at pleasure, produce the Acid Fumes of

of the Sea Salt in the Manner recommended by M. Morveau Guiton.

At Woolwich, in the Military Hospitals, they have used a Fumigation of the oxygenated Muriatic Acid made in the following manner, under the directions of Mr Cruckshanks :

Manganese in Powder - -	2 parts,
Common Salt - -	4 parts,
Vitriolic Acid (the specific Gravity of which in our Pharmacopoeia is 1,85)	3 parts,
Water - - -	1 part.

To a small quantity of the Mixture of Manganese and Sea Salt (suppose three Ounces) the Whole of the Water (which for that Quantity would be Half an Ounce) is added, and to this put in a small Pot (large enough to prevent any Risk from the Ebulition of the Materials) the Vitriolic Acid (in due Proportion) is added at Intervals, which will keep up for a Day a Discharge of the Oxygenated Muriatic Vapour : The Smell is not unpleasant ; and the Vapour gives no Annoyance either to the Sick or their Attendants. Any of the Three preceding Modes of Fumigation may be used in the Apartments of the Sick, and every one may use his own Judgement in deciding to which he will give the Preference.

In the Expurgation of Houses, it may serve by way of Example to give, as an extreme Case, the Steps we would recommend in the Purification of an Hospital, that had been used for the Reception of Persons ill of the Plague.

Every Door and Window should be open for some Time previous to the Expurgators entering upon their Business, that they may run as little Risk as possible. In the Apartments, such Articles of Linen, Apparel, Bed Cloaths, &c. as remained, should directly be put in Water, afterwards to be boiled. The Bedstead, Beds, and other Articles not admitting of this, should be placed favourably for Fumigation. The Pots with the Fu-

migating Materials of Sulphur, &c. should be properly disposed, and the Windows and Doors, except one, being all shut, Fire should be set to the Pots. The Door, left open for the Retreat of the Person that set fire to the Pots, should be shut as soon as he has made his Escape, and the Fumes should be confined in the Apartment for Twenty-four Hours; every Apartment must undergo the same Process. The House should afterwards be whitewashed with Quick Lime and Water, and the Floors should be washed with a copious Stream of Water, for which Purpose even the common Fire Engine might be extremely useful.

It has been doubted how far the Purification of any Town ought to be extended; and universal Purification of every House, and of all their Contents, would not only be impracticable; but we have no Reason to think it would be necessary. Those Houses only should be obliged to undergo Purification, in the Manner above described, which have either held Persons who have been ill of a Pestilential Disorder, or which have received Things susceptible of Infection from tainted Places; likewise the Purification of Goods can only be necessary when they have been exposed to the Touch or Exhalations of the Sick, or have been in contact with infected Substances. Therefore the Things contained in Trunks, Wardrobes, or Store-rooms, may be exempted from Quarantine, even though Persons should have died in the House, provided they have been locked up, and sealed by the Magistrate, previous to the Disease having entered the House.

The following Observation is taken from Doctor Rus-
Page 531. sel's History of the Plague.

" In large commercial Towns it may be Matter of
" Deliberation, whether it would not be a prudent Mea-
" sure, for the Merchants to shut up their Warehouses,
" depositing the Keys with a proper Magistrate; this,
" in many cases, would render the Purification of Mer-
" chandize, as practised with infinite Labour at Mar-
" seilles, unnecessary, and might contribute to a speedier

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" Re-establishment of Commerce, because such Mer-
" chandize, accompanied with authentic Certificates,
" would certainly be less liable to Suspicion than such as
" had remained in open Warehouses all the time of
" Sickness, and might therefore be exported with more
" Safety."—And again, " Goods of a more suspicious Page 552,
" Kind which have not been thus shut up might be sent
" to the Lazaretto to be aired, or perhaps be fumigated
" in the Warehouse."

The whole of the above Regulations should be conducted under the Inspection and Direction of the Magistrates. And where the Parties are unable to defray the Expence of Purification, it should be paid by the Public.

An Inventory should be taken and a Watchman or Guard placed at the infected House, till the Purification is completed, and any loss that may happen should be made good by the Public, from Rates levied on the Neighbourhood.

All Persons employed for the Purposes here described, or for any other Purpose by which they have been exposed to Infection, should be obliged to go into a Warm Bath and afterwards perform a Quarantine of Twenty Days before they are restored to Society.

What we have submitted must be considered rather as a Sketch than a detailed Plan of Purification and Expurgation; yet if the general Principles of destroying the Poison by Ventilation, Washing, and Fumigation, be kept in View, it will not be difficult to adapt them to all Cases that may occur.

(Signed) A. S. Hamond. J. Hunter.
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L. Pepys. W. Heberden.

Board of Health,
Somerset Place,
15th May 1805.

Ja. Harvey Secretary.